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ABSTRACT

This report reviews auctions used by various federal agencies to examine the feasibility of using similar auctions to determine interest rates for student borrowing through the Federal Family Education Loan Program (FFELP) and the William D. Ford Federal Direct Loan Program. The review identified 31 different auctions, divided into two major categories, used by federal agencies to sell assets. In the first category are 12 auctions classified as auctions of specialized items (such as rights or financial assets); the 19 other auctions are classified as auctions of assets of interest to the general public (such as real estate or consumer goods). Background discussion focuses on interest rates and government costs in FFELP and the general characteristics of these auctions. A table summarizes features of the federal auctions for rights or financial assets conducted by 12 different agencies, and a second table summarizes features of the 19 federal auctions for real estate or consumer goods. An enclosure describes individually the 12 federal auctions for rights or financial assets. (DB)

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Health, Education, and
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February 24, 1999

The Honorable William F. Goodling
Chairman, Committee on Education
and the Workforce
House of Representatives

The Honorable Howard P. McKeon
Chairman, Subcommittee on Postsecondary
Education, Training, and Lifelong Learning
Committee on Education and the Workforce
House of Representatives

The Honorable Peter Hoekstra
Chairman, Subcommittee on Oversight
and Investigations
Committee on Education and the Workforce
House of Representatives

Subject: <u>Competitive Financing Mechanisms: Auctions Used by Federal Agencies</u>

Students borrowing through the Federal Family Education Loan Program (FFELP) and the William D. Ford Federal Direct Loan Program (FDLP) pay interest rates that are set by the Congress.[1] The Congress also sets the maximum interest rate that lenders participating in FFELP can receive. Government costs in the program depend in part on the relationship between borrowers' and lenders' interest rates. In setting these rates, the Congress faces several tradeoffs. For example, the borrowers' rate must be low enough that students can afford to borrow, and the lenders' rate must be high enough to ensure a reasonable rate of return to participating lenders. However, if the rate for borrowers is too low or the rate for lenders is too high, federal costs increase. The difficulty in establishing satisfactory interest

[1]For an FFELP loan, a lender, usually from the private sector, provides loan funds, makes and services the loan, and collects loan repayments; the government guarantees the loan against default. Under FDLP, in contrast, the government provides funds for loans made to student borrowers, schools make the loans on behalf of the government, and a contractor services and collects loan repayments. Since FDLP loans were first made in 1993, FDLP borrowers' rates have generally been identical to those for FFELP loans. In academic year 1997-98, federal student loans made through FFELP totaled about \$22 billion and those through FDLP about \$11 billion.

rates was illustrated by discussions in the past year, during the reauthorization of the Higher Education Act of 1965 (HEA), over the level at which to set them. The administration proposed reducing both borrowers' and lenders' rates below a level that some members of the Congress and FFELP lender groups believed would be sufficient to keep lenders in the program. The reauthorization eventually reduced both rates, but the borrowers' rate was reduced by more than the lenders' rate, and the government currently makes up the difference to lenders.

In the course of these discussions, some in the administration and the Congress raised the possibility of establishing an auction or some other type of financial market mechanism to determine the lenders' interest rate rather than the Congress setting it. Such a mechanism could be designed to encourage bidders to compete to offer the lowest cost to students or to the government, and it could take several forms. For example, the government could auction the right to make loans to students, or it could auction all or part of the loan portfolio after students have already taken out their loans. Because auction structures can vary a great deal, and because of ongoing discussions regarding auctions in FFELP, you asked us to identify the auctions federal agencies currently use to award rights or sell assets and the ways in which they differ.

We gathered information on a diverse selection of federal agency auctions from our earlier reports, other literature on auctions, and internet searches of government programs. In some cases, we supplemented our information with interviews with agency officials. While we made a concerted effort to research multiple sources of information, we cannot be certain we have identified all such auctions. We have been mandated to do further work in this area, including analyzing how the student loan industry might or might not be suitable for an auction, and thus we did not perform such analyses for this report.[2] We conducted our study between June 1998 and January 1999 in accordance with generally accepted government auditing standards.

In summary, we identified 31 auctions that federal agencies use to sell assets such as rights to conduct certain activities, financial assets, real estate, and consumer goods. We classified 12 of the 31 as auctions for specialized items that are of interest primarily to members of a particular industry or large investors. Assets sold in these auctions include the right to provide wireless communications service in a given market, allowances to emit a certain amount of sulfur dioxide (SO_2) into the atmosphere, and Treasury securities. Some of these auctions sell assets in a single round of bidding while others use multiple rounds, and some result in a single winner while others result in multiple winners. The 19 other auctions are for assets that can be classified as being of interest to the general public, including individual homes and consumer goods, such as cars or furniture, seized or deemed surplus by the government. Some of these auctions use open bidding and others use sealed bidding, but they have many characteristics in common, such as a single winner for each item auctioned and a single round of bidding.

[2]P.L. 105-244 (Oct. 7, 1998), section 801.

BACKGROUND

Since the inception of FFELP, the government has established interest rates for borrowers and lenders in the student loan program, with the goal of ensuring students access to higher education at an affordable price with an adequate profit for lenders. These rates have generally decreased since then, in part because of policy decisions, but policymakers cannot be certain how low they can set interest rates--to minimize costs for students and the government--without endangering lenders' participation in FFELP. For this reason, some have raised the idea of using some type of auction, or other market mechanism, to set the interest rate that lenders receive.

Interest Rates and Government Costs in FFELP

The government guarantees student loans made through FFELP--that is, the government generally reimburses lenders if borrowers default. In addition, the government subsidizes interest costs for students in two ways. For all FFELP loans, the government sets an interest rate that is generally below the market rate students would otherwise pay and sets a rate for lenders to ensure that they receive close to a market interest rate. In addition, for subsidized FFELP loans, the government pays interest to lenders on behalf of students while they are attending school or in a grace or deferment period.[3] Government costs in the program depend in part on the relationship between borrowers' and lenders' interest rates, a relationship that has changed throughout the history of the program.

In FFELP, students pay an interest rate established by the Congress, and lenders receive an interest rate similarly established by the Congress, although the rate may differ from the borrowers' rate. Before 1986, borrowers paid a fixed interest rate, but lenders received a variable rate--the 91-day Treasury bill (T-bill) rate plus a margin above that rate, set at 3.5 percentage points. When borrowers' interest payments were less than what lenders were entitled to receive, the government paid lenders the difference, which was substantial in times of high interest rates. In 1992, legislation changed the borrowers' rate to a variable rate--the 91-day T-bill plus a 3.1 percentage point margin, subject to a cap of 8.25 percent. The lenders' margin over the 91-day T-bill was also equal to 3.1 percentage points in 1992. If the T-bill rate was low enough that the cap was not in effect, then borrowers paid the same rate

[3]Stafford loans, which make up the bulk of FFELP loans, can be subsidized (in which case, the government makes interest payments on behalf of students while they are in school or in a grace or deferment period) or unsubsidized (in which case the borrower is responsible for all interest costs). The rates described here are for Stafford loans; terms for consolidation loans and Parent Loans for Undergraduate Students, the other components of FFELP, differ somewhat. Under current program rules, a grace period is a 6-month period after a borrower first leaves school before loan payments first commence. Once the borrower enters repayment, a deferment is a period during which loan payments are suspended under certain conditions, such as the borrower's going on to further education.

lenders received and the federal government did not incur costs from an interest rate differential.[4] In 1995, the lenders' and borrowers' margins were reduced to 2.5 percentage points for periods when a borrower was in school or in a grace or deferment period; the margin remained 3.1 percentage points during repayment.

The current debate over interest rates and market mechanisms was sparked by a further reduction in interest rates scheduled for 1998. The interest rate for both borrowers and lenders was to change to the 10-year Treasury bond rate plus a 1.0 percentage point margin on July 1, 1998, but temporary legislation was passed to postpone this change.[5] This legislation kept the 91-day T-bill as the basis for borrowers' and lenders' rates but reduced the margin: Borrowers in repayment now pay the 91-day T-bill rate plus 2.3 percentage points, capped at 8.25 percent; lenders receive the 91-day T-bill rate plus 2.8 percentage points; and the government pays lenders the 0.5 percentage point difference. This rate was set to expire September 30, 1998, but was extended to June 30, 2003, by the reauthorization of HEA.

Throughout the history of FFELP, and especially over the past year, debate over this formula has centered on whether lenders' profits have been excessive--at the expense of college students, their families, and taxpayers. Lenders have claimed that recent proposals to reduce the interest rate they receive would force them to end their participation in FFELP. Studies by the Department of the Treasury, the Congressional Budget Office (CBO), and the Congressional Research Service (CRS) have reached differing conclusions about the extent to which lenders could bear a reduction in their interest rate and still continue to earn reasonable profits.[6] As a more recent CBO study noted, the federal government lacks information regarding the costs FFELP lenders incur through their participation.[7] Consequently, the current rate-setting formula may result in some lenders earning higher profits than necessary to secure their participation. However, if the government were to make a significant cut in

[4]The government still incurred costs from defaults during these periods. In addition, the government still incurred interest subsidy costs during these periods for subsidized loans made through FFELP.

[5]This change was scheduled in 1993, upon passage of the bill establishing FDLP. The bill assumed that direct loans would entirely replace FFELP loans by 1998 and would have made the interest rate the same as the discount rate used in scoring the loans for budgetary purposes, consistent with the Federal Credit Reform Act of 1990.

[6]Department of the Treasury, "The Financial Viability of the Government-Guaranteed Student Loan Program," 1998; Congressional Budget Office, "The Profitability of Federally Guaranteed Student Loans," March 30, 1998; Congressional Research Service, Student Loans: What is the Problem With Converting to the 10-Year Interest Rate Benchmark?" CRS Report 97-733E, July 25, 1997.

[7]Congressional Budget Office, "Using Auctions to Reduce the Cost of the Federal Family Education Loan Program," July 7, 1998.

the lenders' rate and some lenders decided not to participate in the program, the supply of loans might be reduced, perhaps to the point of being insufficient to satisfy the borrowing desired by students.

These concerns have led some policymakers to suggest using an auction or some other competitive market mechanism to set the lenders' interest rate. In an auction, FFELP lenders or other bidders could signal the lowest possible interest rate they would accept to participate in the program. They might bid for the right to originate FFELP loans, with the winner or winners being those who offer to do so at the lowest rate. Alternatively, they might bid for loans that have already been originated, with the winner or winners being those willing to accept the lowest subsidies. In either case, because many lenders could be bidding, this competition might better ensure that the most efficient lenders would win a role in the student loan market. Proponents of auctions say that they can generate increased revenue for the government, or a reduction in spending, compared with the current system in which the government determines prices in the absence of market information. Opponents believe that certain institutional features of the student loan market make using an auction unsuitable for the program.

General Characteristics of Auctions

Designers of an auction must make choices about certain of its characteristics. They include such basic choices as what types of assets will be auctioned--for example, the right to make loans or loans that have already been made--and whether they are to be auctioned individually or in groups. Other characteristics include how bidders will place bids on those assets, how winners are to be determined, and what price a winner will pay. One familiar auction is an "open outcry," in which bidders call out prices that increase as the bidding progresses until no one is willing to place a higher bid. Assets are auctioned individually, and the last bidder wins the asset and pays the price bid. This is an "open" auction because each bidder knows what others are bidding (and the identity of the other bidders) and a "first-price" auction because the price paid is the price bid. One variation on this model is a "sealed-bid" auction, in which bidders submit their bids without knowing what others are bidding. Another variation is a "second-price" auction, in which the highest bidder wins but pays the second-highest price bid.[8]

[8]A second-price auction can, under certain circumstances, generate more revenue for the seller because bidders are more likely to bid their true valuation of the object. In deciding how high to bid, bidders try to avoid the "winner's curse," which arises because by definition the winning bidder has valued an object more highly than other bidders and, perhaps, overvalued it. In a first-price auction, bidders thus shade their bids downward from their valuation of the object, because they do not want to win at too high a price. In a second-price auction, however, a winning bidder pays only the next highest valuation of the object, a valuation at least one other bidder has placed on the object.

Other auctions sell multiple items--either identical or different items--simultaneously. Bidders might bid on individual items or on groups of items, usually through a sealed bid. If the items are grouped for collective bidding, either the auctioneer or a bidder might define how the items are grouped. As with a single-item auction, the pricing method can vary. If all winning bidders pay the amount they bid, the auction exhibits "discriminatory pricing" because different bidders might pay different amounts for identical items. If all bidders pay a common price, typically the lowest winning bid, then the auction is a "uniform-price" auction.

Auctions may differ in these respects, but they are generally used in order to maximize the revenue generated by selling assets. If the seller sets a price for an asset and sells it at that price, the seller will not know whether the asset might have sold at a higher price. With many bidders, if an asset is about to sell at too low a price, presumably someone will bid slightly higher than the last bid to secure it. Furthermore, this will continue until a bid is placed that is higher than the valuation all other bidders place on the asset, which means it sells for as high a price as possible.

The seller will not realize the optimal price if bidders can collude when placing bids. In some circumstances, bidders acting together can win an asset while paying a lower price than one winner would have paid had all bidders bid competitively. They then either split the asset or make payments among themselves such that all end up better off than they might have after competitive bidding. Thus, avoiding the possibility of collusion is an important consideration in designing an auction.[9] This may be more important in repeated auctions, when the same bidders may be competing with one another over a period of time, than in one-time auctions.

AUCTIONS USED BY THE FEDERAL GOVERNMENT AND HOW THEY DIFFER

We identified 31 auctions the federal government uses. These auctions vary by how agencies group assets for bidding, how many winners result, how bids are made, how many bidding rounds take place, and certain characteristics that may restrict or encourage participation. We have classified the auctions into two categories: those for rights or financial assets and those for real estate or consumer goods.

Auctions for Rights or Financial Assets

Of the 31 auctions, 12 are for rights or financial assets, and they tend to be of interest to a targeted population and differ greatly one from another. These auctions are relatively

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[9]Overt collusion may involve direct communication and agreement among bidders and may be illegal. In other cases, bidders might act in a manner that has economic consequences similar to overt collusion but without the attendant direct communication, and thus the action may not be illegal.

complex, and their characteristics are specifically tailored for the assets. Table 1 lists these auctions and some of their characteristics. For more detail on each of these 12 auctions, see the enclosure.

Table 1: Summary of Features of Federal Auctions for Rights or Financial Assets

Agency	Item auctioned	Number of winners		Type of bidding		Number of rounds of bidding		Restrictive or inclusive features		
		Single winner for each unique asset	Multiple winners for identical assets	Open	Sealed	One	Multiple	Minimum or reserve bid set	Deposit required	Consideration for small or noncompetitive bidders
Agriculture: Farm Service Agency	Subsidies for land reserved through the Conservation Reserve Program		✔		✔	✔		✔		
Agriculture: Food and Nutrition Service	Right to provide infant formula for Special Supplemental Nutrition Program for Women, Infants and Children	✔			✔	✔				
Agriculture: Foreign Agricultural Service[a]	Subsidies to export goods through the Export Enhancement and Dairy Export Incentive Programs		✔		✔		✔			
Agriculture: Forest Service[b]	Right to cut timber	✔		✔	✔	✔	✔	✔	✔	✔
Energy[c]	Right to extract petroleum in Elk Hills Naval Petroleum Reserve		✔		✔		✔	✔		✔
Environmental Protection Agency	Allowances to emit sulfur dioxide		✔		✔	✔			✔	
Federal Communications Commission[d]	Right to provide wireless communications services	✔		✔	✔		✔	✔	✔	✔
Health and Human Services[e]	Right to originate loans through the Health Education Assistance Loan program		✔		✔	✔				✔
Housing and Urban Development: Federal Housing Administration[f]	Defaulted mortgages	✔			✔	✔	✔		✔	

Agency	Item auctioned	Number of winners		Type of bidding		Number of rounds of bidding		Restrictive or inclusive features		
		Single winner for each unique asset	Multiple winners for identical assets	Open	Sealed	One	Multiple	Minimum or reserve bid set	Deposit required	Consideration for small or noncompetitive bidders
Interior: Bureau of Land Management[b]	Right to cut timber	✔		✔	✔	✔	✔	✔	✔	✔
Interior: Minerals Management Service	Right to extract oil, gas, and sulfur from the Outer Continental Shelf	✔			✔	✔		✔	✔	
Treasury: Bureau of the Public Debt	Bills, notes, bonds		✔		✔	✔		✔		✔

Note: This table omits an auction used by the Resolution Trust Corporation, which no longer exists, and an auctioned planned by the Small Business Administration, to begin in 1999, both for defaulted loans.

[a]We describe agency's two programs together because they operate in the same way.

[b]Depending on the sale, agency uses both open-outcry and sealed-bid auctions. If an open-outcry format is used, it may be preceded by the submission of sealed bids. Thus, some sales involve two bidding rounds.

[c]This was a one-time competitive negotiated sale with many elements of an auction. While it was designed so that multiple bidders could win, in fact a single bidder won all assets.

[d]Bidders submit sealed bids, but because bidders know what the high bid is in each market at the end of each bidding round, and have the opportunity to raise any bid, this auction has elements of an open-outcry auction.

[e]Consideration for noncompetitive bidders in first year of auction only.

[f]Agency sometimes institutes a second bidding round.

The 12 auctions that sell rights or financial assets are typically of interest to a small set of bidders and have characteristics tailored to the assets being auctioned. Federal agencies auction the right to originate medical students' loans, provide wireless communications services, emit certain amounts of SO_2, and receive subsidies for reserving land from farm production. These auctions tend to be of interest to members of a particular industry--for example, lenders who might already participate in student loan programs, telecommunications providers, businesses that produce SO_2 in their operations, or farmers considering how much to produce in a given year. Financial assets that are auctioned include Treasury securities and pools of defaulted mortgages, and these auctions generally induce participation from a narrow group, such as large investors.

While the 12 auctions have some common factors, other characteristics vary widely. Some auctions result in individuals winning specific assets, while others, such as auctions for SO_2 allowances and Treasury securities, sell identical assets to multiple winners. Some agencies, such as the Federal Housing Administration in its loan auctions, group assets for bidding, and how the assets are grouped could affect bidding practices. In the auction for the right to provide wireless communications services, nonidentical assets--the right to provide services for large metropolitan areas and rural areas--are auctioned simultaneously. All these auctions use some form of sealed bid, although several incorporate aspects of open bidding as well. Some auctions incorporate mechanisms designed to encourage small bidders to participate, but others set minimum bids or require deposits to be made before the auction, which might discourage participation by small bidders.

Auctions for Real Estate or Consumer Goods

The 19 other auctions are for real estate or consumer goods and are of interest to a more general population. These auctions have more uniform characteristics, although they differ in that some use open bids and others use sealed bids. Table 2 summarizes the features of these 19 auctions.

Table 2: Federal Auctions for Real Estate or Consumer Goods

Agency	Item auctioned	Number of winners		Type of bidding		Number of rounds of bidding	
		Single winner for each unique asset	Multiple winners for identical assets	Open	Sealed	One	Multiple
Agriculture	Agency surplus items	✔		✔	✔	✔	
Defense: Army Corps of Engineers	Housing owned by army personnel who were transferred and unable to sell on their own	✔			✔	✔	
Defense: Defense Reutilization and Marketing Service	Agency surplus items	✔		✔	✔	✔	
Energy	Agency surplus items	✔		✔	✔	✔	
Federal Deposit Insurance Corporation	Defaulted properties for which agency held or guaranteed loan	✔		✔	✔	✔	
General Services Administration	Both agency surplus items and surplus from other agencies	✔		✔	✔	✔	
Government Printing Office	Agency surplus items	✔			✔	✔	
Housing and Urban Development: Federal Housing Administration	Defaulted properties for which agency held or guaranteed loan	✔		✔	✔	✔	
Interior: Bureau of Land Management	Federal land deemed unneeded	✔		✔		✔	
Justice: U.S. Marshals' Service	Property seized in use for, or as proceeds of, illegal activity	✔		✔	✔	✔	

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Agency	Item auctioned	Number of winners		Type of bidding		Number of rounds of bidding	
		Single winner for each unique asset	Multiple winners for identical assets	Open	Sealed	One	Multiple
National Aeronautics and Space Administration	Agency surplus items	✔		✔	✔	✔	
Small Business Administration	Defaulted properties for which agency held or guaranteed loan	✔		✔	✔	✔	
Tennessee Valley Authority	Agency surplus items	✔		✔		✔	
Treasury: Bureau of Alcohol, Tobacco, and Firearms	Property seized in use for, or as proceeds of, illegal activity	✔		✔		✔	
Treasury: Customs Service	Property seized in use for, or as proceeds of, illegal activity	✔		✔		✔	
Treasury: Internal Revenue Service	Property seized in use for, or as proceeds of, illegal activity	✔		✔		✔	
Treasury: Secret Service	Property seized in use for, or as proceeds of, illegal activity	✔		✔		✔	
United States Postal Service	Items damaged or lost in mail	✔		✔	✔	✔	
Veterans Affairs	Defaulted properties for which agency held or guaranteed loan	✔			✔	✔	

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These 19 auctions have many characteristics in common, such as a single winner for each item auctioned and a single round of bidding. The sources for real estate range from properties for which borrowers defaulted on a federally held mortgage to excess public lands to housing being sold by army personnel transferring to a different location. Consumer goods that are auctioned include surplus items that an agency no longer needs--such as computers, furniture, or vehicles--but can also be items that the government seized because they were used for illegal purposes. For example, Treasury auctions items seized by four of its agencies: the Bureau of Alcohol, Tobacco, and Firearms; the Customs Service; the Internal Revenue Service; and the Secret Service. Agencies publicize these auctions by various methods, including the internet, newspaper advertisements, and advance mailings to bidders who have signed up to receive such information. Most auctions are open to anyone who wants to bid, although some agencies place age restrictions on bidders or do not allow agency employees to participate. Items generally are auctioned individually, with one bidder winning each item after a single round of bidding. The auctions may be conducted as sealed-bid or open-outcry auctions, and some agencies use both methods, depending on the particular items being auctioned at a given time.

AGENCY COMMENTS

We discussed our findings with program-level staff from the Office of Student Financial Assistance Programs, Department of Education, who offered several technical comments that we incorporated as appropriate. We also sent relevant portions of a draft of this letter to program-level staff in each agency who work with the 12 auctions that we discuss in table 1 and the enclosure. We incorporated comments they made regarding our descriptions of how the auctions operate.

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We are sending copies of this letter to the Secretary of Education, appropriate congressional committees, and others who are interested. If you or your staffs have any questions or wish to discuss this letter further, please contact me or Jay Eglin, Assistant Director, at (202) 512-7014. Major contributors include James W. Spaulding and Shimon Sarraf.

Carlotta Joyner

Carlotta C. Joyner
Director, Education and
Employment Issues

Enclosure

SUMMARIES OF FEDERAL GOVERNMENT AUCTIONS FOR RIGHTS OR FINANCIAL ASSETS

This enclosure describes 12 federal auctions for the right to undertake certain activities or for financial assets.

AGRICULTURE, FARM SERVICE AGENCY: CONSERVATION RESERVE PROGRAM

Since 1986, the Conservation Reserve Program (CRP) has provided rental payments to farmers and ranchers to remove agricultural land from production for 10 to 15 years, with the ultimate goal being the prevention of soil erosion, the improvement of air and water quality, and the establishment or preservation of wildlife habitats. Bid evaluation commences with farmers and ranchers requesting rental payments through sealed bids for specific plots of land. The bids may also include steps they will take to plant crops to help preserve soil or provide wildlife cover. The Department of Agriculture (USDA) compares each rental request bid to soil-specific maximum rates it has developed and automatically rejects all requests above the price ceiling. It then evaluates the remaining bids on the basis of an environmental benefits index, which, in addition to cost, incorporates soil erosion benefits, wildlife cover, water quality improvement, and three other weighted index components. Farmers and ranchers whose bids meet a predetermined standard, as shown by the index, are enrolled in the program, and USDA pays them an annual rent in exchange for retiring the land from production.

AGRICULTURE, FOOD AND NUTRITION SERVICE: WOMEN, INFANTS AND CHILDREN INFANT FORMULA REBATES

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) provides federal grants to the states for food, including infant formula, for infants and young children, as well as pregnant, postpartum, and nursing women. Typically, participants receive benefits in the form of vouchers that they redeem at authorized retail vendors to obtain food at no cost to the participants. Then, on the basis of the redeemed vouchers, the state WIC agencies reimburse the retail vendors for the food sold to the WIC participants.

In 1989, WIC state agencies, with few exceptions, were required by law to implement a competitive bidding system for the procurement of infant formula (or an alternative method of cost containment that yields savings at least equal to those under a competitive bidding system). Most of the state programs award a rebate contract to a manufacturer for the exclusive right to sell its infant formula to WIC participants.[10] Infant formula manufacturers

[10] Some groups of states have jointly contracted for a sole-source provider of infant formula, so the geographic area covered by some contracts may be larger than a single state.

submit sealed bids, and a state awards a sole-source contract to the firm offering the lowest net price--wholesale price minus rebate. The winning manufacturer then has the right to provide infant formula in that state for the WIC program. The manufacturer is billed by the state's WIC agency for rebates on all infant formula that WIC participants purchase with vouchers at authorized retail outlets.

AGRICULTURE, FOREIGN AGRICULTURAL SERVICE: EXPORT ENHANCEMENT AND DAIRY EXPORT INCENTIVE PROGRAMS

Begun in the mid-1980s, the Export Enhancement and Dairy Export Incentive Programs are designed to strengthen U.S. export competitiveness in foreign subsidized markets. In both programs, USDA pays subsidies, called bonuses, allowing exporters to sell agricultural products in targeted countries at below-cost prices. USDA establishes quantity and budget outlay limits for each commodity and country, which creates a quasi-competitive environment for the subsidies. Once exporters fulfill certain requirements and become eligible to participate, it is their responsibility to contact prospective buyers in eligible countries and negotiate a deal. After a sale has been negotiated, a prospective exporter submits a bid to USDA that includes the quantity, the negotiated price, and the requested bonus, on a per unit basis, that would allow the sale to take place at the negotiated price. USDA reviews each bid for the competitiveness of the price and the bonus requested and also compares it with offers from other exporters. USDA rejects bids with too low a price or too high a bonus, based on prior USDA market research. In some circumstances, USDA ranks acceptable bids by their requested bonus amounts and makes awards in ascending order of requested bonus until the quantity is filled, but this method is used less frequently now than in the past. Exporters are notified of accepted bids the following business day. If all bids are rejected, a new round of bidding may take place.

AGRICULTURE, FOREST SERVICE: TIMBER SALES

Forest Service auctions for the right to cut timber on a specific tract of land use both a sealed and an open bidding system. Bidders are told the minimum price--the Forest Service's minimum estimated value for a given tract--and volume of each species on the tract. In some sales, bidders submit sealed bids and a bid bond, and the high bidder wins the right to harvest the tract. In other sales, bidders submit initial bids, and the Forest Service then conducts an oral auction open to those who submitted bids at least equal to the minimum price. Bids may be based on total sale value or may consist of smaller subbids, made on a per unit basis, for each timber species found on the tract. Despite the use of these component bids, the tracts are indivisible: One winner is declared for each tract of land after the Forest Service evaluates bids and calculates total bid amounts. Some sales provide for preferential awards to small businesses.

Winners provide some form of advance deposit but do not pay for the timber until it is harvested and sent off the tract, and they are obligated to harvest the entire tract and pay for all the trees. In some cases, they pay the amount they bid, while in other cases, the contract

provides for adjustments because of changed market conditions. Finally, for some sales, Forest Service personnel measure the volume by species while the harvest is being conducted and base the sales price on these measurements, while in other sales the price paid is based on the measurement of the timber before the harvest.

ENERGY: ELK HILLS NAVAL PETROLEUM RESERVE

The Department of Energy (DOE) sold the U.S. government's interest in the Elk Hills Naval Petroleum Reserve to Occidental of Elk Hills for $3.65 billion in 1997, after conducting a competitive negotiated sales process similar to a sealed-bid auction. DOE offered for sale two types of interests in the Reserve: 1 "operating" working interest, representing 74 percent of the government's interest, and 13 "nonoperating" working interests, each representing a 2-percent segment. The nonoperating interests were meant to allow bidders the opportunity to bid on smaller portions and increase the universe of potential bidders and maximize government revenues. On the basis of five valuation assessments, DOE established a minimum acceptable price for the government's interests. Qualified bidders, those with a tangible net worth of at least $10 million, could submit multiple offers for individual segments or bundles of segments. DOE received 22 bids from 15 bidders. After providing all bidders who exceeded the minimum acceptable price the opportunity to provide a "best and final" offer, DOE determined that Occidental's offer for all interests in the reserve exceeded all other bid combinations. DOE proceeded to negotiate the terms of the final agreement with Occidental.

ENVIRONMENTAL PROTECTION AGENCY: SULFUR DIOXIDE ALLOWANCES

The 1990 amendments to title IV of the Clean Air Act mandated that the Environmental Protection Agency (EPA) hold or sponsor an annual auction that provides an opportunity for electric utilities to acquire additional pollution rights, or allowances, as part of the government's acid rain reduction program. EPA delegates to the Chicago Board of Trade (CBOT) the conduct of an auction for sulfur dioxide (SO_2) allowances using a single-round sealed-bid design. Every year, polluters receive a specific number of allowances, each granting the right to emit one ton of SO_2. Without acquiring additional allowances, each polluter would be fined for each ton of SO_2 it emitted beyond its initial allocation. This fine was initially set at $2,000 and has been indexed to inflation, compared with a clearing price of $115 per ton in the 1998 auction.

EPA's auction sells both spot and advance SO_2 allowances. Spot allowances can be used during the current year or any year thereafter, while advance allowances can be used only for compliance purposes beginning 7 years from the sale date. Bidders send sealed bids containing the number of spot and advance allowances to be purchased at specific prices to CBOT with a certified check or letter of credit for the total bid cost. CBOT designates winning bids on the basis of highest bidding price until all allowances have been sold or the number of bids is exhausted. EPA may not set any minimum price for allowances. In this discriminatory-price auction, winning bidders pay the amount they bid, meaning that the

highest bidders pay more than other winning bidders do for the same commodity. Allowances can also be traded privately throughout the year.

FEDERAL COMMUNICATIONS COMMISSION: ELECTROMAGNETIC SPECTRUM LICENSES FOR WIRELESS COMMUNICATIONS

The Federal Communications Commission (FCC) has conducted 18 auctions for licenses to provide various types of wireless communications services, including broadband Personal Communication Service, Digital Broadcast Service, and Local Multipoint Distribution Service (LMDS). Some of these auctions have been conducted for one or two nationwide licenses, but many have been for hundreds of licenses to serve particular markets, defined geographically. In these auctions, FCC uses a multiple-round simultaneous design, and bidders may choose to bid on one or many licenses during the auction.

For a given auction, all prospective bidders submit an application notifying FCC of their interest in bidding on certain licenses. After FCC has reviewed and approved the initial applications, bidders make refundable deposits to purchase a sufficient amount of "bidding units" to ensure their eligibility to bid on the licenses they desire. Each license is tied to a certain number of bidding units, with licenses for larger markets generally being assigned more bidding units. A bidder's maximum eligibility, defined by the number of bidding units it holds, limits not the dollar amount of actual bids placed but only the total number of bidding units bid on during any single round.

FCC uses an Automated Auction System in order to process bids. Once bidders purchase the appropriate computer software, they can send bids through a private and secure wide area network. At the end of the first bidding round, all bidders learn the maximum bid for each license. They can then increase bids for any license they wish, subject to their eligibility level, in the second round. Bidding continues round by round, until a round generates no new bids. Several FCC auctions have entailed more than 150 rounds.

To ensure a fair return to the government for all licenses, FCC establishes minimum opening bids, which vary by license: Licenses for small and medium-sized markets generally have lower minimum opening bids than those for large markets. Bidding credits may be used to promote equity among bidders. For example, in the 1998 LMDS auction, discounts of 45 percent were given to bidders with annual gross revenues of $15 million or less, 35 percent to bidders with revenues of $15 million to $40 million, and 25 percent to bidders with revenues of $40 million to $75 million.

HEALTH AND HUMAN SERVICES: HEALTH EDUCATION ASSISTANCE LOAN ORIGINATIONS

Since 1992, the Department of Health and Human Services (HHS) has used a single-round, sealed-bid auction to assign loan origination rights to lenders with the lowest rates for

students in the health professions. Within the Health Education Assistance Loan (HEAL) program's auction, lenders win the right to originate loans with a government guarantee of repayment, also known as "insurance authority." HEAL loans are made to students in 11 professional health disciplines, each with a particular insurance authority allotment. Two disciplines are categorized as "medical," the others as "other." Lenders bid simultaneously by these categories and disciplines. Lenders can bid for a portion of a discipline--for example, for only a particular school or state.

In a given year's auction, participants submit a sealed bid to HHS consisting of an interest rate during a student's in-school, grace, deferment, and repayment periods; the volume of loans they are interested in providing; their interest capitalization policy; and the market they are bidding in, whether specific disciplines or states. HHS evaluates bids assuming each loan recipient will spend 1 year in school, 9 months in grace, 3 years in deferment (for the medical disciplines), and 25 years in repayment. With this framework, HHS estimates how much a $10,000 loan would cost a student over the life of the loan. HHS ranks lenders' costs from low to high and then groups bidders into "bands" consisting of bidders with similar costs. For example, in fiscal year 1997-98, all lenders bidding within $750 of the lowest bid were placed in the first, or winning, band, and others were placed in the second, or nonwinning, band.

In order to diversify loan originators, HHS allocates loan volume equally among winning bidders. For example, if five lenders win, each gets 20 percent of the total volume or the amount it bid on, whichever is less. Because this is a discriminatory-price auction, winning lenders must offer the terms they bid (or offer lower cost terms) and cannot originate loans at another winner's higher rate. If one winning lender originates almost all its allocated amount while another is well below its limit, HHS reallocates additional authority from a low lender to the one nearing its ceiling, thus ensuring competition even after the auction concludes. However, if the lowest-cost bidder is well below all other bidders, HHS might award all lending authority to this single bidder.

During the HEAL program's first year, 20 percent of the loans were set aside for nonwinning bidders. This facilitated a transition out of the program and allowed for easier future participation by these lenders. Minimum bid and auction deposit mechanisms are not used in this auction.

HOUSING AND URBAN DEVELOPMENT, FEDERAL HOUSING ADMINISTRATION: DEFAULTED MORTGAGES

In 1994, the Federal Housing Administration (FHA) began a program to sell mortgages it held on both single-family and multifamily homes through a competitive auction, primarily through a sealed-bid design. At the time, FHA owned almost 2,400 multifamily mortgages with an approximate unpaid principal balance of $7 billion, in addition to 90,000 single-family mortgages. FHA had insured these mortgages, and most of them came into FHA's portfolio through default. Recent movements to streamline the federal government and

FHA's inability to effectively service and monitor such a large portfolio provided some of the impetus for these sales.

FHA mortgages are grouped for sale by performance and geographic characteristics. For example, in 1996, FHA grouped 16,500 residential, single-family mortgage loans into 750 mortgage loan blocks of approximately $1 million on the basis of performance and then, for similarly performing loans, by geography. Investors could bid on individual mortgage blocks or create their own mortgage pools by making their own combination of mortgage blocks. One bidder might make a single bid on a particular mortgage block, while another bidder might include that block with others and make a pooled bid. No bidder could make more than ten pooled bids.

In order to maximize proceeds for taxpayers and to provide a level playing field for large and small investors, FHA uses a computer program to determine the best available bid combination. Since bidders can combine mortgage blocks into pools of their choosing, the potential number of combinations is very large, and the computer program must account for all combinations that have been bid.

FHA requires bidders to submit a deposit--for example, in the 1996 single-family mortgage sale, bidders had to submit 10 percent of the bid price, in the case of an individual bid, or 10 percent of the highest bid price among a bidder's multiple bids. Bids are expressed as a percentage of the pool's aggregate unpaid principal balance. FHA reserves the right to conduct a "best and final" round for the top 5 percent of bidders or to use a lottery if there is still more than one successful bidder after the "best and final" round.

INTERIOR, BUREAU OF LAND MANAGEMENT: TIMBER SALES

The Bureau of Land Management (BLM) auctions timber in a manner similar to the Forest Service. Most BLM timber sales take place in western Oregon, although BLM timber sales also take place in the 11 other western states that have BLM-administered land. For a given timber sale, BLM calculates a minimum bid from an estimate of the number of trees of each species and their average size. The estimated total volume in hundred cubic feet (ccf) is multiplied by the appraised price per ccf, and this product is published as the minimum bid. Most auctions begin with sealed bids and then proceed to an oral auction, open to those whose sealed bids are at least as high as the minimum bid and who have submitted the required deposit with their bids. If no bids are submitted at the oral auction, the sale may be conducted with sealed bids, but this does not occur frequently. As the Forest Service does, BLM evaluates bids on the basis of their total dollar amounts, regardless of subbids on individual species. BLM may also publish rules regarding how a particular plot is to be logged, which might include required construction or maintenance of roads, the time of year that logging is to occur, and methods to be used in logging. In some sales, BLM sets aside a portion of the overall volume for preferential award to small businesses that meet certain criteria.

INTERIOR, MINERALS MANAGEMENT SERVICE: MINERAL SALES ON THE OUTER CONTINENTAL SHELF

The Minerals Management Service (MMS) issues leases for submerged Outer Continental Shelf lands for the purpose of mining oil, gas, and sulfur deposits. Individuals and companies seeking to extract the minerals submit bids for leasing rights to MMS. The bids contain "bonuses" to be paid the government for the lease of specific areas, and bidders also submit deposits for the amount they bid. A bid represents a contractual obligation to pay a fee in return for the government's awarding the rights to explore and possibly develop the minerals on the leased land. Only one round of bidding takes place. While a minimum bid is set, MMS also estimates the value of the extraction rights after the auction, to ensure that the winning bidder bids at least this value. For tracts for which MMS believes good information is available to only a few potential bidders, and for those for which it receives an insufficient number of competitive bids, MMS estimates the value of the extraction rights and uses this measure to set the reservation price. For tracts that MMS deems have been bid competitively, MMS relies on market measures to ensure the receipt of fair value. The winner pays annual rent for the land, in addition to royalties on the gross value of subsequent mineral production. In some cases, payment of royalties is suspended until production reaches a certain level. Proceeds from the leases are sent to accounts with Treasury, such as the Land and Water Conservation Fund or the Historic Preservation Fund, and in some cases to states whose coastal borders are adjacent to the leases.

TREASURY, BUREAU OF THE PUBLIC DEBT: BILLS, NOTES, AND BONDS

Treasury conducts auctions for each of the three types of marketable securities--bills, notes, and bonds.[11] The first Treasury auction took place in 1929. In 1947, noncompetitive bidding was introduced, and in 1998, the format for awarding most securities was changed from a discriminatory-price to a uniform-price auction.[12]

Treasury security auctions incorporate both competitive and noncompetitive bidding. Competitive bidders actually set the yield through their bids. They include money market banks, dealers, and other institutional investors who buy large quantities of government securities. Noncompetitive bidders, who agree to pay the weighted average of the accepted competitive bids, are usually individuals. Before competitive bidders receive any securities, Treasury sets aside amounts requested by noncompetitive bidders.

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[11]A Treasury bill has a term of 1 year or less, a note has a 1- to 10-year term, and a bond has a term of more than 10 years.

[12]Treasury first conducted uniform-price auctions in 1992, for sales of 2- and 5-year notes; it has used uniform-price auctions for inflation-indexed securities since January 1997. All other securities changed to the uniform-price method in 1998.

Competitive bidders submit a demand schedule for the security being auctioned, consisting of both a yield and a desired volume to be purchased at that yield.[13] Treasury ranks the bids it receives from the lowest to highest yield and accepts bids until the cumulative bid volume equals the total volume offered. Before 1998, in most Treasury auctions, successful bidders received the yield that they bid, so that winning bidders in an auction might receive different yields. With the change from a discriminatory-price to a uniform-price auction, bids are still ranked from the lowest to highest yield, but all successful bidders receive the highest accepted yield rather than the yield they bid. All bidders in Treasury auctions may bid without a deposit, although a payment mechanism must be in place with each bidder's Federal Reserve bank. Treasury has established a minimum bid of $1,000 for all securities.

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[13]For auctions of bills, participants bid the desired discount rate rather than the desired yield.

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